

-2-

SUB F
B3

--The restriction of the discharge region occurs preferably on at least two essentially opposite sides, and can be, for example, in the form of a cylinder or prism with round or polygonal cross section, depending on the shape of the substrate to be coated. It is also especially appropriate to enclose it between two flat substrates arranged parallel to one another. Regardless of the shape of the enclosure, the distance between the opposite surfaces in each case should be about 1 mm to 50 cm, preferably 1 cm to 10 cm.--

B4

Page 4, between lines 5 and 6, after the paragraph ending with "can be maintained." insert the heading BRIEF DESCRIPTION OF THE

DRAWINGS--

B5

Page 4, between lines 15 and 16, after the paragraph ending with "deflecting element." insert the heading DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS--

B6

separate page? Page 6, line 30, please delete "Claims" and insert What is claimed is:--

In the Claims:

B7
GJL X F4

1. (Amended) A process for surface treatment of at least one electrically conducting substrate or a substrate that has been coated so as to be electrically conducting, the process comprising the steps of:
placing a gas in a region of an electric discharge;
restricting the discharge region on at least two opposite sides by surfaces to be treated, wherein the one or more substrates form a hollow cathode;
and
treating the substrate surfaces by a hollow-cathode glow discharge.

Please cancel claim 2 without prejudice.

B8

3. (Twice Amended) The process according to claim 1 wherein one or more continuously supplied substrates are fed to restrict the discharge region in at least some areas of the region.

-3-

4. (Twice Amended) The process according to claim 1
wherein the substrates are band-shaped.

Sub F>
5. (Twice Amended) The process according to claim 3 further
comprising the step of:
turning at least one of the substrates at least once to change the
direction of movement;

B8 cont'd
wherein the discharge region is restricted on at least one side by an
area of the substrate before the turn in the direction of movement, and on at least
one other side by an area of the substrate after the turn in the direction of
movement.

6. (Twice Amended) The process according to claim 1
wherein the discharge region is restricted on two sides by substrate surfaces at a
distance of 1 mm to 50 cm apart.

Sub H2 1
7. (Twice Amended) The process according to claim 1
wherein the electric discharge occurs at a pressure between 0.01 mbar and 100
mbar.

Sub F6>
8. (Twice Amended) The process according to claim 1
wherein at least one substrate is grounded.

9. (Twice Amended) The process according to claim 1
wherein the voltage applied between at least one substrate and a plasma formed
by electric discharge is 1 V - 3000 V.

10. (Twice Amended) The process according to claim 1
wherein the discharge is supported by microwaves.

-4-

11. (Twice Amended) The process according to claim 1
wherein the discharge is activated by a DC voltage, a pulsed DC voltage, or a
low-, intermediate-, or high-frequency AC voltage.

SUB F7
P8 cont

12. (Twice Amended) The process according to claim 1
wherein gas is fed into one of the discharge region and immediately outside the
discharge region.

13. (Twice Amended) The process according to claim 1
wherein gas is removed from one of the discharge region and immediately outside
the discharge region.

14. (Twice Amended) A device for surface treatment of at least
one electrically conducting substrate or a substrate that has been coated so as to
be electrically conducting, the device comprising:

SUB F7

at least one substrate defining a discharge region enclosed on at
least two sides by substrate surfaces;
means for supplying electrical energy to the discharge region;
a vacuum chamber to enclose the discharge region;
means for supplying gas to the vacuum chamber;
means for removing gas from the vacuum chamber; and
an anode placed in the region of the at least one substrate;
wherein the at least one substrate forms a hollow cathode, and
wherein the at least one substrate is surface treated by a hollow-cathode glow
discharge.

15. (Amended) The device according to claim 14 wherein
substrate-cooling is provided.

-5-

16. (Twice Amended) The device according to claim 14
wherein gas supply is arranged in one of the discharge region and immediately
outside the discharge region.

Ex F7
D8
Cmcl 1/6
17. (Twice Amended) The device according to claim 14
wherein gas removal is arranged in one of the discharge region and immediately
outside the discharge region.

18. (Twice Amended) The device according to claim 14
wherein at least one substrate is a continuously running band adapted to be
unwound from a first spool and adapted to be wound onto a second spool.

sub 1/2
B8
19. (Twice Amended) The device according to claim 18 wherein
the first spool and the second spool are arranged outside the vacuum chamber,
and the band is adapted to be introduced into and removed from the vacuum
chamber by vacuum locks.

20. (Twice Amended) The device according to claim 18 wherein
the first spool and the second spool are arranged inside the vacuum chamber.

SUB F8
21. (Twice Amended) The device according to claim 14
wherein in the vacuum chamber, in the region of the sides of the discharge region
not restricted by the substrate surfaces, deflection elements are arranged that are
electrically isolated from the device components and at least one substrate.

22. (Twice Amended) The device according to claim 14
wherein in the vacuum chamber, deflection elements are arranged in the regions
of device components in which parasitic discharges could be formed due to their
potentials, or around the substrate and the discharge region, and wherein these
deflection elements are electrically isolated from the device components and the
substrate.